

### **REMARKS**

Claims 1-38 are pending. By this amendment, claim 15 is cancelled, and claims 1, 16, 24, 29, 34, and 38 are amended to more precisely recite the novel features of the present application. Support for the amendments can be found at least in paragraphs [0023] and [0039] of the specification. No new matter is introduced. Reconsideration and issuance of a Notice of Allowance are respectfully requested.

#### **Double Patenting Rejections**

Claims 1, 16, 24, and 34 are provisionally rejected based on the non-statutory obviousness-type double patenting as being unpatentable over claims 1 and 5-6 of co-pending Published Patent Application 2005/0160238 (the '238 Publication). Filed herewith is a terminal disclaimer in accordance with 37 C.F.R. §1.321 disclaiming any term extending beyond that of the '238 Publication. Withdrawal of the rejection of the claims based on the judicially created doctrine of double patenting is respectfully requested.

#### **35 U.S.C. § 103 Rejections**

On page 3 the Office Action rejects claims 1-38 under 35 U.S.C. §103(a) over U.S. Patent 5,535,116 to Gupta et al. (hereafter Gupta) in view of U.S. Published Patent Application 20020129211 to Arimilli et al. (here after Arimilli), and further in view of U.S. Patent 7,032,079 to Bauman (hereafter Bauman). Independent claims 1, 16, 24, 29, 34, and 38 have been amended to incorporate part of the subject matter of claim 15 and additional features. Regarding claim 15, the Office Action asserts that Gupta discloses a hybrid cache coherency protocol in column 2, lines 17-20 and 63-67. This rejection is respectfully traversed.

Claim 15 has been cancelled, rendering the rejection of claim 15 moot.

Gupta is directed to a flat directory organization to create a flat cache-only multi-processor architecture. As acknowledged by the Office Action on, for example, page 4, Gupta does not disclose or suggest receiving a conflict response. Arimilli is directed to a data processing system and method for resolving a conflict between requests to modify a shared cache line. As acknowledged by the Office Action on, for example, page 4, Gupta and Arimilli, individually and in combination, do not disclose or suggest a conflict state machine that transitions to a conflict state in response to receiving a read conflict response. Bauman is directed to a system and method for accelerating read requests within a multiprocessor system.

However, Gupta, Arimilli, and Bauman, individually and in combination, do not disclose or suggest "a hybrid cache coherency protocol including a broadcast source snoop

protocol implemented in conjunction with a forward progress protocol, wherein each of the first and second processors employs the broadcast source snoop protocol to issue a snoop request for the data and provide responses for the data, and wherein if the snoop request fails in the broadcast source snoop protocol, the hybrid cache coherency protocol transitions to the forward progress protocol and each of the first and second processors reissues a request for the data using the forward progress protocol,” as recited in amended claim 1.

Column 2, lines 17-20 and 63-67 of Gupta provide, respectively:

In shared-memory multi-processors that use a write-invalidate cache coherence protocol, cache misses may be classified into four types. A cold miss is the result of a block being accessed by a processor for the first time.

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Such an architecture offers significant performance improvements over both CC-NUMA and COMA machines. A preferred embodiment of the invention employs a flat directory-based cache coherence protocol.

The cache coherence protocol of a preferred embodiment of the invention utilizes a flat directory organization.

Gupta merely mentions that there are different protocols. However, nowhere in the cited passages (or anywhere else) does Gupta disclose or suggest that if the snoop request *fails* in the broadcast source snoop protocol, the hybrid cache coherency protocol *transitions* to the forward progress protocol, and each of the first and second processors *reissues* a request for the data using the forward progress protocol.

Since Gupta, Arimilli, and Bauman, individually and in combination, do not disclose or suggest all of the features of amended claim 1, amended claim 1 is patentable.

Amended claims 16, 24, 29, 34, and 38 recite features similar to those of claim 1, and for this reason, claims 16, 24, 29, 34, and 38 also are patentable.

Claims 2-14 depend from patentable claim 1; claims 17-23 depend from patentable claim 16; claims 25-28 depend from patentable claim 24; claims 30-33 depend from patentable claim 29; and claims 35-37 depend from patentable claim 34. For these reasons and the additional features they recite, claims 2-14, 17-23, 25-28, 30-33, and 35-37 also are patentable.

Withdrawal of the rejection of claims 1-14 and 16-38 under 35 U.S.C. §103(a) is respectfully requested.

### Conclusion

In view of the above remarks, Applicant respectfully submits that the application is in condition for allowance. Prompt examination and allowance are respectfully requested.

Should the Examiner believe that anything further is desired in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the telephone number listed below.

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Respectfully submitted,



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